Serial No. 10/072,688 Docket No. NEC 01FN071 Amendment A

## **AMENDMENTS TO THE SPECIFICATION:**

Please amend the title beginning at page 1, line 2, as follows:

<u>A</u> LIQUID CRYSTAL DISPLAY DEVICE AND <u>A</u> DRIVING METHOD THEREOF

EMPLOYING A HORIZONTAL LINE INVERSION METHOD

Please amend the subparagraph beginning at page/6, line 12, as follows:

21

FIG. 4A is a graph FIGS. 4A, 4C and 4D are graphs showing the gradation- γ correction voltage relation used in the driving method for the liquid crystal display device according to the first embodiment of the invention, and FIG. 4B is a waveform diagram showing the signals supplied to the liquid crystal panel based on this driving method; and

## Please amend the subparagraph beginning at page 6, line 18, as follows:



FIG. 5A is a graph FIGS. 5A, 5C and 5D are graphs showing the gradation-γ correction voltage relation used in the driving method for the liquid crystal display device according to the second embodiment of the invention; and FIG. 5B is a waveform diagram showing the signals supplied to the liquid crystal panel based on this driving method.

Please amend the paragraph bridging pages 11 and 12, beginning at page 11, line 20, as follows:

03

HAYES SOLOWAY P.C.

130 W. CUSHING ST. TUCSON, AZ 85701 TEL. 520.882.7623 FAX. 520.882.7643

175 CANAL STREET MANCHESTER, NH 03101 TEL. 603.668.1400 FAX. 603.668.8567 FIG. 5A is a graph FIGS. 5A, 5C and 5D are graphs demonstrating the gradation- $\gamma$  correction voltage relations used in the driving method of the liquid crystal display device according to the present invention; and FIG. 5B is a waveform diagram showing the signals supplied to the liquid crystal panel during the operation based on this driving method. As shown in FIG. 5A in the present embodiment, the gradation- $\gamma$  correction voltage relation is symmetrical with respect to a point in the center between the top gradation step and the bottom

Serial No. 10/072,688 Docket No. NEC 01FN071 Amendment A

ant

gradation step, but not represented with a straight line (in this embodiment, represented with a polygonal line). The horizontal drivers 3 apply  $\gamma$  correction voltage to the liquid crystal panel 5 in response to the input gradation data to meet the relation. This relation can be provided by changing the resistance of each ladder resistance constituting the standard voltage generating circuit 6 of the liquid crystal display device shown in FIG. 3.

## Please amend the paragraph beginning at page 12, line 8, as follows:



In the same manner as the first embodiment shown in FIG. 4A FIGS. 4A, 4C and 4D, the positive-polarity gradation- $\gamma$  correction voltage relation shown with the solid line in FIG. 5A is referred to when generating  $\gamma$  correction voltage to be applied during a 1H cycle for the input gradation data, while the negative-polarity gradation- $\gamma$  correction voltage relation shown with the dot-dash line is referred to when generating  $\gamma$  correction voltage to be applied during the subsequent 1H cycle. For example, the applied voltage for displaying gradation X3 will be VD with reference to the positive-polarity gradation- $\gamma$  correction voltage relation for a 1H cycle, while that for the subsequent 1H cycle will be VE with reference to the negative-polarity gradation- $\gamma$  correction voltage relation. In this case, the effective voltages applied to the liquid crystal layer of the liquid crystal panel 5 will be |VD-VC|, |VE-VC|, respectively for the 1H cycle and the subsequent 1H cycle. Since the gradation- $\gamma$  correction voltage relation is symmetrical with respect to a line, these voltage differences in absolute values (D, E) become equal to each other (D=E), as illustrated in FIG. 5B.

HAYES SOLOWAY P.C.

130 W. CUSHING ST.

TUCSON, AZ 85701 TEL. 520.882.7623

175 CANAL STREET
MANCHESTER, NH 0310
TEL. 603.668.1400
FAX. 603.668.8567

Please amend the paragraph beginning at page 13, line 9, as follows

The present invention has been described in details with respect to various embodiments,

Serial No. 10/072,688 Docket No. NEC 01FN071 Amendment A

and.

and it will now be apparent from the foregoing to those skilled in the art that changes and modifications may be made without departing from the invention in its broader aspects, and it is the invention, therefore, in the appended claims to cover all such changes and modifications as fall within the true spirit of the invention. For example, the gradation- $\gamma$  correction voltage relation for use in displaying gradation is not limited those described in FIG. 4A and FIG. 5A FIGS. 4A, 4C and 4D and FIGS. 5A, 5C and 5D but may be those represented with other curved lines and polygonal lines, instead of a straight line, as far as it is symmetrical with respect to a point in the center between the top gradation step and the bottom gradation step.

## HAYES SOLOWAY P.C.

130 W. CUSHING ST. TUCSON, AZ 85701 TEL. 520.882.7623 FAX. 520.882.7643

175 CANAL STREET MANCHESTER, NH 03101 TEL. 603.668.1400 FAX. 603.668.8567